CLAIMS

What is claimed is:

1. A flexible flying disk, comprising:

a body having a circular perimeter formed about a central axis ;

the body including a weighted annular margin at the perimeter, and wherein the annular margin defines an axial margin dimension;

a central web spanning the perimeter at one axial end of the margin, and wherein the central web defines an axial web thickness that is less than the axial margin dimension; and

wherein the web and annular margin are integral and are formed of a thermosetting molded and heat cured catalyzed silicone.

2. The apparatus of claim 1, further comprising a visually discernable graphic on the body formed by silicone ink.

3. The apparatus of claim 1, further comprising a visually discernable graphic on the body, pad printed and formed by a heat cured silicone ink.

4. The apparatus of claim 1, further comprising a visually discernable graphic, silk screened on the body formed with a heat cured silicone ink.

5. The apparatus of claim 1, wherein the molded and heat cured catalyzed silicone includes a Shore A hardness durometer value of between approximately 20 and 60.

6. The apparatus of claim 1 wherein the molded and heat cured catalyzed silicone includes a Shore A hardness durometer value of approximately 40.

7. The apparatus of claim 1, and further comprising:

a visually discernable graphic on the body, and formed by a heat cured silicone ink ; and

wherein the molded and heat cured catalyzed silicone includes a Shore A hardness durometer value of approximately 40.

8. The apparatus of claim 1, wherein the molded and heat cured catalyzed silicone is compression molded at approximately 4000 lbs per square inch of projected surface area of the body.

9. The apparatus of claim 1, wherein the molded and heat cured catalyzed silicone is injection molded into a mold cavity heated to 350 degrees Fahrenheit.

10. The apparatus of claim 1, wherein the molded and heat cured catalyzed silicone is formed at approximately 4000 lbs per projected surface area of the body and cured at a temperature of approximately 350 degrees Fahrenheit for between about 2 and 10 minutes.

11. A process for producing a flexible flying disk, comprising:

providing a first mold part with an outwardly open cavity formed therein defining part of a circular flying disk configuration;

providing a second mold part with a mold surface thereon defining a remaining part of the circular flying disk configuration;

placing a pre catalyzed volume of silicone within one of the mold parts;

pressing the mold parts together at a equal to about 4000 pounds per square inch of projected surface area of the flying disk configuration;

heating the mold parts to a temperature of about 350 degrees Fahrenheit for a time period of between about 2 and 10 minutes to cure the pre-catalyzed silicone; and

separating the mold parts to allow removal of the cured flying disk.

12. The apparatus of claim 10, and further comprising printing a graphic on the cured disk using silicone ink.

13. The apparatus of claim 10, and further comprising printing a graphic on the cured disk using silicone ink; and

heat curing the silicone ink.

14. The apparatus of claim 10, and further comprising printing a graphic on the cured disk using silicone ink; and

heat curing the silicone ink at a temperature of about 350 degrees Fahrenheit for about 2 minutes.

15. The apparatus of claim 10, and further comprising printing a graphic on the cured disk by:

providing a printing plate with the graphic thereon;

applying a silicone ink to the printing plate;

pressing a flexible pad against the printing plate to transfer ink from the printing plate to the flexible pad; and

subsequently pressing the flexible pad onto the cured disk, to transfer the ink from the flexible pad to the disk; and

heat curing the silicone ink at a temperature of about 350 degrees Fahrenheit for about 2 minutes.

16. The apparatus of claim 10, and further comprising printing a graphic on the cured disk by:

providing a silk screen with the graphic thereon;

applying the screen to the body;

spreading a silicone ink over the graphic on the silk screen;

lifting the screen from the body to leave a silicone ink graphic image on the body; and

heat curing the silicone ink at a temperature of about 350 degrees Fahrenheit for about 2 minutes.

17. A flexible flying disk, comprising:

a body formed of heat cured silicone having a Shore A durometer of between about 20 and 60, and having a circular perimeter with a diameter of between about 4 and 8 inches centered on a central axis;

the body including a weighted annular margin at the perimeter;

wherein the annular margin defines an axial margin dimension that is about 0.11 of the diameter;

a central web spanning the perimeter at one axial end of the margin;

wherein the central web includes an axial web thickness that is about 0.007 of the axial margin dimension; and

wherein the web and annular margin are integral.

18. The apparatus of claim 16, further comprising a silicone ink formed image on the body.

19. The apparatus of claim 16, further comprising an image on the body that is pad printed and formed by a heat cured silicone ink.

20. The apparatus of claim 16, further comprising a silk screened visual image on the body, formed of a heat cured silicone ink.

21. A process for producing a flexible flying disk, comprising:

providing a mold formed of two separable parts that together form a flying disk shaped cavity;

heating the mold to about 350 degrees Fahrenheit;

injecting liquid catalyzed silicone into the heated mold; and

curing the injected liquid catalyzed silicone in the mold for between about 30 and 60 seconds.